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Attorneys for Plaintiff JENS ERIK SORENSEN,
as Trustee of SORENSEN RESEARCH AND
DEVELOPMENT TRUST

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

JENS ERIK SORENSEN, as Trustee of
SORENSEN RESEARCH AND
DEVELOPMENT TRUST,

Plaintiff

v.

LEXAR MEDIA, INC., a Delaware
Corporation; and DOES 1 – 100,

Defendants.

and related counterclaims.

) Case No. 08 CV 00095 JW

)

) **DECLARATION OF PAUL P.**

) **BROWN IN SUPPORT OF**

) **PLAINTIFF'S MOTION FOR**

) **APPLICATION OF 35 U.S.C. § 295**

) **PRESUMPTION OF**

) **INFRINGEMENT**

)

) Date: June 9, 2008

) Time: 9:00 A.M.

) Courtroom 8, 4th Floor

) Judge: The Hon. James Ware

)

) *Oral Argument is Respectfully Requested*

) *at Hearing on This Matter.*

)

)

1 I, PAUL P. BROWN, declare:

2 1. I am not a party to the present action. I am over the age of eighteen. I
3 have personal knowledge of the facts contained within the following paragraphs, and
4 could and would competently testify thereto if called as a witness in a court of law.

5 2. This Declaration contains the following information:

6 a. Summary of expert opinion

7 b. My qualifications and work history in the field of plastic injection
8 molding (Section A, commencing on page 2);

9 c. The need for the '184 patented process technology.

10 d. Expert analysis and opinion: the accused products include all
11 discernible elements of the '184 process, as specified below.

12 **A. SUMMARY OF EXPERT OPINION**

13 3. For all the reasons that are explained in greater detail herein, it is my
14 opinion that the two-plastic, injection molded external plastic shells of the LEXAR
15 MEDIA JumpDrive 128MB (the "Accused Products") and all Lexar two-plastic,
16 injection molded components manufactured in a similar manner as said JumpDrive
17 are manufactured using a process that employs all the discernible elements of Claim
18 1 of United States Patent No. 4,935,184 ("the '184 patent").

19 4. The Accused Products exhibit all the essential discernible elements
20 required to perform the '184 patented invention.

21 5. The Accused Products are thin-walled, hollow products, formed of at
22 least two plastic materials having different characteristics, have a closed end and an
23 open end, and have laminated walls terminating in a rim.

24 6. To the extent that it can be determined from examination of the Accused
25 Products, the Accused Products are substantially likely to be produced in two
26 cavities made up of one common mold part and different complementary mold parts.

27 7. Further, the Accused Products possess one or more stabilizing regions in the
28 first plastic material formed such that they resist undesirable relative movement between

1 the mold parts during injection of a second laminated layer as taught in the '184 patent.

2
3 **B. QUALIFICATIONS OF THE DECLARANT**

4 8. I am the president of Turn-Key-Tech, LLC ("Turn-Key"), a small
5 research and development company in San Diego, California dedicated to
6 advancements in plastics injection molding technology.

7 9. In addition to my efforts on behalf of Turn-Key, I have also assisted
8 Plaintiff Sorensen Research and Development Trust ("SRDT") with the analysis of
9 products suspected of infringing the '184 patent.

10 10. My experience includes developing and designing plastic injection
11 molding processes, products, and systems for more than 30 years. My *curriculum*
12 *vitae* is attached hereto as Exhibit A.

13 11. To summarize, my academic training was in Mechanical Engineering. I
14 began my career in engineering as a designer in 1964.

15 12. In 1972, I joined Husky Injection Molding Systems ("Husky") as a
16 design engineer in mechanical research and development.

17 13. I continued at Husky as Senior Design Engineer, then Assistant
18 Engineering Manager, until I eventually became a Manager in Mold Engineering and
19 research and development.

20 14. At Husky, I was responsible for development of as many as 250
21 injection molds per year.

22 15. Since leaving Husky, I have continued doing research and development
23 in plastics injection molding products and processes until the present. I have
24 published articles and presented papers in injection molding. More than 46 U.S.
25 patents and many non-U.S. patents have been granted on my inventions in the field
26 of plastic injection molding.

27 16. I have physically examined the Accused Products and determined that,
28 the Accused Products are substantially likely to include every element of Claim 1 of

1 the '184 patented process to the extent that can be determined without access to the
2 manufacturer's first-hand information.

3 **C. THE NEED FOR THE '184 PATENTED PROCESS TECHNOLOGY.**

4 17. The '184 patent, entitled "Stabilized Injection Molding When Using a
5 Common Mold Part With Separate Complimentary Mold Parts," was issued on June
6 19, 1990.

7 18. The '184 patent provides a long-sought elegant solution to a pervasive
8 problem in the injection molding of hollow plastic products, i.e., how to stabilize the
9 mold parts against relative movement during the highly pressurized injection of
10 molten plastic.

11 19. The '184 patent claims a method for stabilizing the mold parts against
12 relative movement during the second injection of an injection molding process
13 whereby laminated plastic parts are produced sequentially in two cavities made up of
14 at least one common mold part and at least two different complementary mold parts.
15 The '184 patent specifically claims a method to stabilize the mold parts during the
16 second or later plastic injection by molding one or more stabilizing regions into the
17 first plastic material component(s) that rigidly secure the two mold parts against
18 relative displacement during the second or later injection.

19 20. The presence or absence of the elements of the '184 patent can be
20 determined with a high degree of accuracy through physical and destructive
21 examination of the Accused Product. All of those elements that can be determined
22 from an assessment of the Accused Product are present. With regard to those few
23 elements for which absolute determination is not possible without inspection of the
24 mold tooling, the best evidence that can be gathered from examination of the
25 Accused Products, and consideration of the commercially reasonable techniques that
26 may be employed, shows that those elements were most reasonably present in the
27 Accused Processes.

28 21. Absolute confirmation of the existence of a common mold part requires

1 access to the actual injection molds and manufacturing equipment. Most high quality
2 products, as the Accused Products, are made in molds comprising a common mold
3 part.

4 22. The '184 patent discloses a method for solving the explained pervasive
5 problem in the injection molding of hollow plastic products. The problem it
6 addresses is how to stabilize against undesirable relative movement between the
7 mold parts during the highly pressurized injection of molten plastic into the mold
8 cavity.

9 23. Relative movement between the mold parts is undesirable, because it
10 causes misalignment of the mold parts and results in products with sides or layers of
11 uneven dimensions if not adequately controlled. These uneven dimensions can also
12 necessitate greater cooling times for such non-optimal heavier dimensioned product
13 walls to solidify, thereby slowing the production cycle.

14 24. The '184 patented method is directed toward stabilizing the mold parts
15 against relative movement during injection molding of the second layer of laminated
16 plastic products produced in two cavities made up of one common mold part and
17 different complementary mold parts.

18 25. The '184 patent teaches a method to stabilize the mold parts against
19 relative movement during the second or later plastic injections by molding one or
20 more stabilizing regions of an earlier injected plastic material components that
21 rigidly secures the two mold parts against displacement during the second or later
22 injection.

23 26. By stabilizing the mold parts against relative movement during the
24 injection process, hollow products may be produced having improved control of
25 product dimensions.

26 27. The issue of relative movement of mold parts is a constant problem in
27 injection molding of hollow products.

28 28. The relative mold parts movement problem causes misalignment of the

1 mold parts and results in products with walls of uneven dimensions if not adequately
2 controlled. The need for stabilization against relative mold parts movement is
3 critical for two separate reasons.

4 29. First, plastic injection molding requires the use of high injection
5 pressures to fill the cavity. During injection molding, molten plastic is injected into
6 the mold through small injection gates. The mold walls are cooler than the melting
7 temperature of the plastic, and serve to cause the plastic to freeze back into a solid
8 state forming the finished product. In the narrow space with cool mold walls on both
9 sides, the plastic will tend to freeze solid, whereby it is necessary to fill the cavity
10 before the flowing plastic cools and solidifies to block the flow path.

11 30. The use of high injection pressures causes the plastic to flow more
12 rapidly through the mold cavity, so that the cavity becomes completely filled before
13 the plastic freezes to block the flow pathways.

14 31. These high injection pressures increase the tendency toward core
15 displacement during injection, making the requirement of a method for limiting core
16 displacement critical.

17 32. The use of high injection pressures to obtain proper mold cavity fill
18 before the plastic solidifies when molding products is one reason for using methods
19 to reduce core displacement.

20 33. When molding laminated products, there is a second reason why
21 dimensional control is more critical. Laminated products have thin walls that are
22 usually made with narrower dimensional tolerances than thicker-walled products.
23 With thin laminated walls, even small variations in wall thickness could make the
24 product unsuitable for its intended usage.

25 34. Relative movement of the mold parts tends to make the dimensions
26 thicker on one side of the product, and comparatively thinner on the opposing side.
27 Therefore, the resulting product dimensions may be too thick to fit where needed on
28 thicker side, or the dimensions may be unacceptably thin and subject to damage or

1 structural failure in areas which are thinner than designed as a result of the
2 misalignment of the mold parts caused by the relative movement of the mold parts.

3 35. Moreover, the product side that is thus forced to be thicker than
4 designed now requires a longer cooling time to properly solidify, as thicker layers of
5 plastic require costly longer cooling periods to solidify.

6 36. Use of the '184 process offers significant benefit for plastic parts, such
7 as the Accused Products sold by Lexar. For instance, the improved control of
8 dimensions allowed by the process can be used to produce plastic cases that use
9 thicker layers of plastic only in areas that need the strength and can otherwise be
10 made thinner, and thereby with less plastic material than would otherwise be
11 required.

12 37. Thinner layers of plastic solidify more rapidly than thicker layers
13 during the injection process. Because of this, other factors being equal, the thinner
14 products not only save materials, but also can be produced with shorter cycle times
15 to reduce the overall cost of the product.

16 38. The '184 patent thus teaches a method for injection molding hollow,
17 thin-walled plastic products, having closed and open ends with laminated walls
18 terminating in a rim at the open end, where relative movement between the common
19 mold part and the second complementary mold part is impeded during injection of
20 the second or later plastic materials to better control the thickness of the product.

21 **D. EXPERT ANALYSIS AND OPINION: THE ACCUSED PRODUCTS**
22 **INCLUDE ALL ELEMENTS OF THE '184 PROCESS**

23 39. I have personally examined the ACCUSED PRODUCTS, including
24 disassembly and destructive testing.

25 40. My examination of the relevant features of the ACCUSED
26 PRODUCTS, and my knowledge of practices in the plastic injection molding field
27 together form the basis of my determination that the ACCUSED PRODUCTS with
28 high confidence are manufactured utilizing the '184 process as detailed further

1 below.

2 41. I have personally examined and analyzed the ACCUSED PRODUCTS
3 for the use of the '184 patented process.

4 42. In my opinion, the ACCUSED PRODUCTS are plastic products
5 substantially likely to be made using the '184 patented process. From my
6 examination and analysis, it appears that the ACCUSED PRODUCTS are
7 manufactured utilizing the '184 patented process as described in Claim 1 of the '184
8 patent as follows:

9 43. The ACCUSED PRODUCTS exhibit each of the elements of the '184
10 patented process in their manufacture that can be discerned without access to the
11 mold tooling.

12 44. The ACCUSED PRODUCTS are thin-walled, hollow plastic products.

13 45. The ACCUSED PRODUCTS have laminated walls produced by
14 injection molding utilizing a first mold cavity and a second mold cavity.

15 46. My examination shows that portions of the ACCUSED PRODUCTS
16 walls are laminated, and the lamination is terminated at the rim of the ACCUSED
17 PRODUCTS.

18 47. The ACCUSED PRODUCTS possess stabilizing regions molded into
19 the first plastic material components that rigidly secure the two mold parts against
20 displacement during the second injection.

21 48. The ACCUSED PRODUCTS have a closed end and an open end, and
22 are produced by cyclic injection molding.

23 49. The ACCUSED PRODUCTS are molded utilizing a first mold cavity
24 and a second mold cavity, where the first mold cavity utilized to mold the
25 ACCUSED PRODUCTS is formed of a first common mold part and a first
26 complementary mold part, and the second mold cavity utilized to mold the
27 ACCUSED PRODUCTS is with high confidence formed of the same first common
28 mold part (assumed hereafter) and a second complementary mold part.

1 50. The following steps are followed in production of the ACCUSED
2 PRODUCTS: the first common mold part and the first complementary mold part are
3 combined to assemble the first mold cavity into which a first plastic material is
4 injected. The injected first plastic material is solidified to form a first plastic
5 material component of the ACCUSED PRODUCTS. The first common mold part
6 and the first complementary mold part then separate.

7 51. Next, the first common mold part and the second complementary mold
8 part are then combined to assemble the second mold cavity of the ACCUSED
9 PRODUCTS, with the first plastic material component attached to the first common
10 mold part during assembly of the second mold cavity. The first plastic material
11 component is then contained within the second mold cavity. The first plastic
12 material component has one or more stabilizing regions that rigidly secure the first
13 common mold part, in position in relation to the second complementary mold part.

14 52. A second plastic material having different characteristics than the first
15 plastic material is injected into the second mold cavity. The second plastic material
16 then solidifies to form a second plastic material component that combines with the
17 first plastic material component to produce the ACCUSED PRODUCTS.

18 53. During the injection of the second plastic material, the stabilizing
19 regions of the first plastic material component restrict displacement of the first
20 common mold part in relation to the second complementary mold part. The
21 stabilization allows the ACCUSED PRODUCTS to be produced with improved
22 control of its dimensions.

23 54. Both the first plastic material and the second plastic material of the
24 ACCUSED PRODUCTS reach the rim of the Accused Products, forming a
25 laminated area at the rim, thus satisfying all elements of Claim 1 of the '184 patent.

26 55. The presence of the elements of the '184 patent can be determined with
27 high likelihood through physical and destructive examination of the Accused
28 Product. All of those elements that can be determined from an assessment of the

1 Accused Product have been determined to be present. With regard to those few
2 elements for which absolute determination cannot be made without inspection of the
3 mold tooling, the best evidence that can be gathered from examination of the
4 Accused Products shows that those elements were very likely present in the Accused
5 Processes. Complete confirmation of the existence of a common mold part usually
6 requires access to the actual injection molds and manufacturing equipment.

7 56. My investigation leads me to conclude that each of the Accused
8 Products are very likely to be produced with a process that infringes claim 1 of the
9 '184 patent. These conclusions are derived from combining my knowledge of
10 commercial injection molding practices, and my examination of the Accused
11 Products. I have concluded that the only commercially practical processes in which
12 to make the Accused Products are processes that infringe claim 1 of the '184 patent.
13 I have further concluded that the physical evidence indicates the use in the Accused
14 Products of processes that infringe claim 1 of the '184 patent, thus satisfying the
15 "substantially likely" requirement of 35 U.S.C. § 295.

16 I declare under penalty of perjury under the laws of the United States of
17 America that the foregoing paragraphs are true and correct to the best of my own
18 personal knowledge.
19

20 DATED this Thursday, April 10, 2008.
21

22 /s/ Paul Brown


23 
24 _____
25 Paul Brown, Declarant
26
27
28

EXHIBIT A

Paul P. Brown, *Curriculum Vitae*

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Employment History:

Sep. 61 to Sep. 64	General Electric Co., Coventry, England	Apprentice - Telecommunications
Sep. 64 to May. 67	Dorval Tool Co., Coventry, England	Designer, Jig and Fixture, Machine Tool, Multi-Head Drilling & Tapping
May. 67 to Sep. 67	Siskin Drive Engineering, Coventry, England	Designer, Jig and Fixture, Machine Tool, Multi-Head Drilling & Tapping
Sep. 67 to Apr. 71	Kellam and Brooke, Coventry, England	Designer, Jig and Fixture, Machine Tool, Multi-Head
Jun. 71 to Jan. 72	Self Employed, Toronto, Ontario, Canada	Free-lance Designer
Jan. 72 to Mar. 73	Husky Injection Molding Systems, Bolton, Ontario Canada	Design Engineer, Mechanical, Research and Development
Mar. 73 to Jan. 74	“	Senior Design Engineer
Jan. 74 to Feb. 75	“	Design Group Leader
Feb. 75 to Jul. 75	“	Asst. Engineering Manager
Jul. 75 to Dec. 77	“	Manager Mold Standards Engineering
Dec. 77 to Apr. 79	“	Manager, Mold and Machine Test Room
Apr. 79 to Jan. 83	“	Manager, Mold Engineering

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Jan. 83 to Sep. 84	“	Manager, Corporate Mold Engineering
Sep. 84 to Feb. 89	“	Manager, Research and Development
Feb. 89 to Jun. 95	Virtech, Inc. St. Croix, U.S. Virgin Islands	Vice President, Engineering
Jul. 95 to Dec. 95	Primtec San Diego, CA	Vice President, Research and Development
Dec. 95 to present	Turn-Key-Tech San Diego, CA	President and Director of Research and Development

Academic Training:

Coventry Technical College England	Mechanical Engineering
Lanchester College of Technology England	Mechanical Engineering
York University Toronto, Canada	Business studies
McDonnell Douglas St. Louis, MI	CAD- UNIGRAPHICS

Published Articles:

Plastics Technology Magazine, Sep. 77	Runnerless Molding Systems
SPE	Designing and Manufacturing Standardized Molds

Patents:

47+ – United States
58+ – Foreign